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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,902	04/02/2001	Mark A. Harper	10003780-1	1593

7590 11/19/2004  
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EXAMINER

DIVINE, LUCAS

ART UNIT PAPER NUMBER

2624

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/824,902	Applicant(s) HARPER ET AL.	
	Examiner Lucas Divine	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 April 2001.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: **308**. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings and specification are objected to because on page 7 line 23, 'At step 502' should be written as 'At step 504'. Reference number 504 is not mentioned in the specification and line 23 discusses it but uses the wrong reference number. Appropriate correction required.

***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it contains 270 words. Correction is required. See MPEP § 608.01(b).

4. The abstract of the disclosure is objected to because on page 15 line 4, requirements print jobs should be 'requirements of print jobs'. Correction is required. See MPEP § 608.01(b).

#### ***Claim Rejections - 35 USC § 112***

5. Claims 5, 7, 30, and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims all include the limitation of multiplying by a term with 'x' in it. This term 'x' is indefinite because it encompasses all possible numerical digits for multiplication, thus not limiting or particularly pointing out the window size.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1 – 13 and 26 – 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Caruso (US 5592298).

Regarding claim 1, Caruso teaches **a method for ascertaining resource requirements including the steps of:**

**sampling a task requiring a consumable resource to provide a sample** (Fig. 1 [as part of overall system of Fig. 4] ref. no. 106, col. 8 lines 17-18, wherein image data as part of a printing task requiring ink or toner [consumable] is sampled);

**analyzing the sample of the task with respect to resource requirements thereof and providing task sample requirement data in response thereto** (Fig. 1 ref. no. 108, col. 9 lines 40-44 and 66-67, wherein the sample is analyzed to compute the pixels, which determines how much ink/toner will be used, within the sample and the analyzed number of pixels is provided to the system in response to the analyzing as shown in Fig. 1); **and**

**ascertaining the resource requirements of the task based on the task sample requirement data** (Fig. 1 ref. no. 114, col. 8 line 23, wherein the total pixels, and therefore toner/ink requirement, are ascertained to provide the resource requirements of toner/ink for the printing task based on the sample data taken).

Regarding claim 2, which depends from claim 1, Caruso further teaches that **the task includes printing an image on a document** (col. 5 lines 32-33, wherein printer 18 prints the image data on a document).

Regarding claim 3, which depends from claim 2, Caruso further teaches that **the step of sampling includes the step of reading a file containing the document into a buffer** (Fig. 4

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includes a scanner 10 which inherently includes reading the image file into a buffer for performing computation tasks upon the data).

Regarding claim 4, which depends from claim 3, Caruso further teaches that **the step of sampling includes the step of formatting the file in the buffer in print format** (col. 5 lines 27-28, wherein the scanner 8 formats the image into a rasterized print format ).

Regarding claims 5 and 6, which depend from claim 4, Caruso further teaches **the step of overlaying a sample window over the print formatted file in the buffer, the window having an area of  $1/x$  times the area of the document and the step of performing a Raster Image Processing analysis within the sample window to determine window coverage** (col. 5 line 28, wherein the print file is rasterized according to number of scan lines [S as discussed in col. 10 line 17] therefore each scan line acts as a window  $1/S$  the size of the document).

Regarding claim 7, which depends from claim 6, Caruso further teaches that **the step of ascertaining the resource requirements of the task includes the step of multiplying the window coverage by  $x$  to determine the page coverage of the document** (col. 10 includes an equation at line 48 that includes multiplying by S [S discussed above as the number of scan lines 'windows'] as well as other variables to get the portion of the page covered in toner/ink which ascertains the resource requirements).

Regarding claim 8, which depends from claim 7, Caruso further teaches **multiplying the page coverage by a number of pages in the task to determine job requirements** (PC 5 inputs image data grouped as a number of pages and so therefore the number of scan lines would inherently be multiplied by the number of pages [to get the overall scan lines 'windows' for the whole job] to estimate the total pixels for the image data).

Regarding claim 9, which depends from claim 8, Caruso further teaches **comparing the resource requirements of the task to data relating to an availability of the resources** (in order to provide a warning if toner/ink is low and needs replenishment [col. 8 lines 51-57 and col. 12 lines 15-19] the system inherently compares the estimated resource requirements with the amount of ink/toner left in the system).

Regarding claim 10, which depends from claim 9, Caruso further teaches **executing the task if sufficient resources are available** (col. 10 line 6, wherein the amount of ink 'resources' are dispensed as available to print the image data).

Regarding claim 11, which depends from claim 10, Caruso further teaches **providing a message if sufficient resources are not available** (Caruso's system provides a warning if toner/ink is low and needs replenishment [col. 8 lines 51-57 and col. 12 lines 15-19]).

Regarding claim 12, which depends from claim 11, Caruso further teaches **securing additional resources if sufficient resources are not available** (Caruso inherently suggests in col. 8 line 56 that a technician or customer secures additional resources when a warning indicating that ink/toner is not available appears).

Regarding claim 26, the method steps of claim 1 teach all of the program codes of claim 26. The method steps of claim can be executed as program code by processors and as stored in the memory of a printer as suggested by Caruso in col. 8 lines 13-15. Therefore, the program code claim 26 is rejected for the same reasons as stated above in the rejection of claim 1.

Regarding claim 27, which depends from claim 26, the method steps of claim 2 teach all of the limitations of program code claim 27. Therefore, claim 27 is rejected for the same reasons as discussed in the rejection of claim 2.

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Regarding claim 28, which depends from claim 27, the method steps of claim 3 teach all of the limitations of program code claim 28. Therefore, claim 28 is rejected for the same reasons as discussed in the rejection of claim 3.

Regarding claim 29, which depends from claim 27, the method steps of claim 4 teach all of the limitations of program code claim 29. Therefore, claim 29 is rejected for the same reasons as discussed in the rejection of claim 4.

Regarding claim 30, which depends from claim 29, the method steps of claim 5 teach all of the limitations of program code claim 30. Therefore, claim 30 is rejected for the same reasons as discussed in the rejection of claim 5.

Regarding claim 31, which depends from claim 30, the method steps of claim 6 teach all of the limitations of program code claim 31. Therefore, claim 31 is rejected for the same reasons as discussed in the rejection of claim 6.

Regarding claim 32, which depends from claim 31, the method steps of claim 7 teach all of the limitations of program code claim 32. Therefore, claim 32 is rejected for the same reasons as discussed in the rejection of claim 7.

Regarding claim 33, which depends from claim 32, the method steps of claim 8 teach all of the limitations of program code claim 33. Therefore, claim 33 is rejected for the same reasons as discussed in the rejection of claim 8.

7. Claims 13, 15 – 24, and 34 – 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanaya et al. (US 657175) hereafter referred to as Kanaya.



Regarding claim 13, Kanaya teaches **a method for ascertaining resource requirements including the steps of:**

**sampling a task** (printing task) **requiring a consumable resource** (printer with ink) **to provide low resolution** (col. 15 lines 29-30, wherein resolution module 93 shown in Fig. 2 provides low resolution print data; for example 360dpi – which is lower than the possible 720dpi shown in Fig. 25) **level analysis data with respect to resource requirements of the task** (Fig. 14 ref. no. S206, discussed in cols. 21 and 22, wherein the estimated ink ‘resource’ to be used is calculated providing therefore analysis data of analyzing the resource) **and**

**comparing the low level analysis data to data relating to an availability of the resource and providing an output with response thereto** (col. 19 lines 20-30, wherein the calculated data of the predicted ink weight is compared to the capacity of ink in the cartridge, and an output is inherently output if the comparison is successful, with an error occurring when the comparison fails).

Regarding claim 15, which depends from claim 13, Kanaya further teaches **providing actual data relating to an amount of resources required by the task** (Fig. 14 step S212, col. 22 lines 62-64, wherein the actual data of cumulative ejected ink is retrieved and stored in the memory for better predictions, other actual data provided by the system for estimating ink consumption are temperature, residual quality of ink, and others discussed in col. 22 lines 1-17).

Regarding claims 16 and 17, which depend from claim 15, Kanaya further teaches **comparing the actual data to the low level analysis data and generating correction data in response thereto** (col. 21 and 22 teach generating a correction coefficient for correcting errors in standard ejecting, factors that go into this correction coefficient are the actual data

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discussed in claim 15; col. 21 lines 63-65 teach various correction coefficients, including inherently the correction of calculated amount of ink vs. actual amount of ink ejected) and

**adjusting the task sampling step in response to the correction data** (the equation in col. 21, lines 46-47, shows how the correction coefficient is used to adjust the sampling step above by adjusting the estimation of ink usage).

Regarding claim 18, which depends from claim 17, Kanaya further teaches **printing an image on a document** (col. 16 line 37).

Regarding claim 19, which depends from claim 18, Kayana further teaches **printing plural images on plural documents** (Kanaya discusses in col. 10 lines 33-37 the processing of plural color images and specifically teaches printing of images [plural] in col. 26 line 8).

Regarding claim 20, which depends from claim 19, Kayana further teaches **that the images include text** (col. 22 line 27).

Regarding claim 21, which depends from claim 20, Kayana further teaches **performing a Raster Image Processing analysis** (col. 16 lines 11-22 discuss creating raster lines of scanned data for printing).

Regarding claims 22 and 23, which depend from claim 21, Kayana further teaches **executing the task if sufficient resources are available** (col. 1 lines 19-20 suggest the printing if enough ink is available, as inherent to such a printing system) **and providing a message if sufficient resources are not available** (col. 19 lines 26-28).

Regarding claim 24, which depends from claim 22, Kayana further teaches **securing additional resources if sufficient resources are not available** (col. 19 line 28, wherein the

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invention of Kayana demands replacements 'additional resources' when the quantity of ink is not sufficient, thus prompting the securing of additional resources).

Regarding claim 34, the method steps of claim 13 teach all of the limitations of claim 34.

Further the method steps of claim can be executed as program code as specifically stated by

Kanaya in col. 8 lines 1-17 as executed by CPU 81 and stored on RAM 83 or ROM 82.

Therefore, claim 34 is rejected for the same reasons as stated in claim 13 as executable as program code.

Regarding claim 35, which depends from claim 34, the method steps of claim 15 teach all of the limitations of program code claim 35. Therefore, claim 35 is rejected for the same reasons as discussed in the rejection of claim 15.

Regarding claim 36, which depends from claim 35, the method steps of claim 16 teach all of the limitations of program code claim 36. Therefore, claim 36 is rejected for the same reasons as discussed in the rejection of claim 16.

Regarding claim 37, which depends from claim 36, the method steps of claim 17 teach all of the limitations of program code claim 37. Therefore, claim 37 is rejected for the same reasons as discussed in the rejection of claim 17.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanaya in view of Gormish et al. (US 5337362) hereafter referred to as Gormish.

Regarding claim 14, which depends from claim 13, Kanaya teaches all of the limitations of parent claim 13 as discussed above in the rejection of claim 13.

While Kanaya teaches an image processing system including a scanner 21 and resolution conversion module 93, Kanaya does not specifically teach reducing the scanned image's resolution to **fifty dots per square inch** for the taught low level analysis.

Gormish teaches reducing the resolution of a scanned image to **fifty dots per square inch** for printing (col. 9 lines 50-65).

It would have been obvious to one of ordinary skill that the resolution conversion module 93 of Kanaya could reduce images to 50 DPI for printing. The motivations for doing so would have been to process the image data faster by providing an even lower resolution to analyze and to save memory in saving the image file (Gormish col. 9 line 53, wherein the low resolution allows for fast data manipulation and analysis and line 57, wherein 50 DPI provides a much smaller file than larger resolutions).

9. Claims 25 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheuer in view of Kanaya.

Regarding claim 25, Scheuer teaches a **method for ascertaining resource requirements including the steps of:**

**overlaying a window over a document print job in a computer readable medium** (print jobs stored in memory 56) **to provide a sample** (Fig. 3 shows the magenta sample of a printing task, which is provided by a magenta 'window' or mask that **allows** for counting of specific magenta tones; col. 7 lines 58-59, wherein station C is preferred to be magenta toner);

**providing analysis data with respect to consumable resource requirements of the sample** (the magenta sample has been analyzed to provide the magenta pixel count – col. 8 line 20 – inputted to block 100 for the estimation of resource requirements shown in Fig. 3); **and**

**ascertaining the resource requirements of the document based on the sample** (based on the resource requirements of the magenta sample, as well as other samples, the system is able to ascertain the toner requirements of the printing task as shown in Figs. 7 and 8; col. 11 lines 19-34)..

While Scheuer teaches an image processing system with an input scanner, Scheuer does not specifically teach **resolution conversion to a low level resolution**.

Kanaya teaches an image processing system with an input scanner also including **resolution conversion to a low level resolution** (col. 15 lines 29-30, wherein resolution module 93 shown in Fig. 2 provides low resolution print data; for example 360dpi – which is lower than the possible 720dpi shown in Fig. 25).

It would have been obvious to one of ordinary skill in the art that resolution conversion would be a standard addition to an image processing system with a scanning unit as taught in Kanaya. The motivations for adding resolution conversion would be adjusting the output resolution for printers, saving ink and memory resources if desired, and other well known motivations as known in the art.

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Regarding claim 38, the method steps of claim 25 teach all of the limitations of claim 38. Further the method steps of claim can be executed as program code stored in memory 56 which is a computer readable medium and executed by system controller 54. Therefore, claim 38 is rejected for the same reasons as stated in claim 25 as executable as program code.

### *Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US-5987221, Bearss et al., 11-16-1999: teaches an image adjusting system with overlaying windows in a raster image/page buffer array for printer systems.

US-6366744, Phillips et al., 4-2-2002 : teaches an image forming system for estimating job requirements and making decisions based thereon.

US-6028674, Tognazzini, 2-22-2000: teaches testing ink and making notifications and decisions if the ink is not of sufficient density.

US-6006013, Rumph et al., 12-21-1999: teaches a printing system that checks if the print resources are ok, and if not, tries to print the document at a lower resolution.

US-6027200, Takahashi et al., 2-22-2000: teaches an information processing apparatus having means for estimating expendables to be consumed during recording.

US-6356359, Motamed, 3-12-2002: teaches a toner usage estimation system including estimating toner usage from a reduced resolution bytemap.

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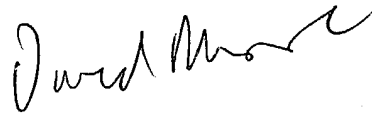
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucas Divine whose telephone number is 703-306-3440. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 703-308-7452. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucas Divine  
Examiner  
Art Unit 2624

ljd



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